



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,842	09/23/2004	Yoji Okita	258958US3PCT	3754
22850	7590	08/11/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			KERSHTEYN, IGOR	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

88

Office Action Summary	Application No.	Applicant(s)	
	10/508,842	OKITA ET AL.	
	Examiner	Art Unit	
	Igor Kershteyn	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09/23/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Halford (2,401,826).

In figure 1, Halford teaches a gas turbine engine, comprising: a compressor compressing air; a combustor to burn fuel in the compressed air compressed by the compressor, a turbine operated by expansion of combustion gas from the combustor, the turbine operating the compressor in association (column 1, lines 51-55, column 2, lines 1-4); a cooling plate O provided on a front stationary section in the vicinity of a turbine disc A,B in the turbine, the cooling plate O extending in a radial direction of the turbine disc A,B so as to be opposed to a front surface of a rim of the turbine disc in a manner such that the opposing surface of the cooling plate O is close to the front surface of the rim; a front cooling passage N formed between the opposing surface of the front cooling plate O and the front surface of the rim wherein a portion of compressed air as cooling air can flow through the front cooling passage N; a rear cooling plate Q provided on a rear stationary section (not numbered) in the vicinity of a rear side of the turbine disc A,B, the rear cooling plate Q extending in a radial direction of the disc A,B so as to be opposed to a rear surface of the rim A,B in a manner such

Art Unit: 3745

that the opposing surface of the rear cooling plate Q is close to the rear surface of the rim; and a rear cooling passage Q' formed between the opposing surface of the rear cooling plate Q and the rear surface of the rim wherein a portion of the compressed air as the cooling air can flow through the rear cooling passage Q', wherein the opposing surface of the front cooling plate O is substantially in parallel to the front surface of the rim, and the opposing surface of the rear cooling plate Q is substantially in parallel to the rear surface of the rim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 7 and 8 are rejected under 35 U.S.C. 103(a) as being anticipated by McLeod (2,623,727).

In figure 2, McLeod teaches a gas turbine engine, comprising; a cooling plate (not numbered) provided on a front stationary section in the vicinity of a turbine disc (not numbered) in the turbine, the cooling plate extending in a radial direction of the turbine disc so as to be opposed to a front surface of a rim of the turbine disc in a manner such that the opposing surface of the cooling plate is close to the front surface of the rim; a front cooling passage (not numbered) formed between the opposing surface of the front cooling plate and the front surface of the rim wherein a portion of compressed air as

cooling air can flow through the front cooling passage; a rear cooling plate (not numbered) provided on a rear stationary section in the vicinity of a rear side of the turbine disc, the rear cooling plate extending in a radial direction of the disc so as to be opposed to a rear surface of the rim in a manner such that the opposing surface of the rear cooling plate is close to the rear surface of the rim; and a rear cooling passage formed between the opposing surface of the rear cooling plate and the rear surface of the rim wherein a portion of the compressed air as the cooling air can flow through the rear cooling passage, wherein the opposing surface of the front cooling plate is substantially in parallel to the front surface of the rim, and the opposing surface of the rear cooling plate is substantially in parallel to the rear surface of the rim.

Notes.

1) Eventhough McLeod does not explain the structure as claimed, Figure 2 clearly show the structure which is claimed. (See MPEP 2111.03 and 2125).

McLeod does not explicitly disclose a compressor compressing air; a combustor to burn fuel in the compressed air compressed by the compressor, a turbine operated by expansion of combustion gas from the combustor, the turbine operating the compressor in association.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art of gas turbine engines to recognize the inherency of a compressor compressing air; a combustor to burn fuel in the compressed air compressed by the compressor, a turbine operated by expansion of combustion gas from the combustor, the turbine operating the compressor in association in the

Art Unit: 3745

structure, a part of which is taught by McLeod. Therefore it would have been obvious to a person of ordinary skill in the art to use the structure of McLeod in a gas turbine engine having a compressor compressing air; a combustor to burn fuel in the compressed air compressed by the compressor, a turbine operated by expansion of combustion gas from the combustor, the turbine operating the compressor in association.

Allowable Subject Matter

Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of one patent.

Johnstone (2,598,176) is cited to show a cooling plate extending in parallel to a rim of a turbine disc but fails to teach the cooling plate provided on a stationary structure.

Art Unit: 3745

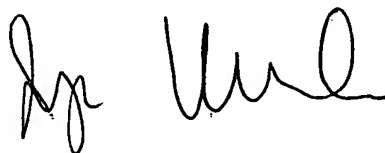
Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is **(571)272-4817**. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on **(571)272-4820**. The fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK
August 6, 2005

A handwritten signature in black ink, appearing to read 'Igor Kershteyn', is written over a horizontal line.

**Igor Kershteyn
Patent examiner.
Art Unit 3745**